

WO 2004/058980

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# SEQUENCE LISTING

<110> CropDesign N.V.

<120> Plants having modified growth characteristics and a method for making the same

<130> CD-070-PCT

<160> 50

<170> PatentIn version 3.1

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<212> DNA

<213> Arabidopsis thaliana

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 Ala Phe Ser Ser Tyr Gln Ala Leu Gly Gly His Lys Ala Ser His Arg  
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 Lys Leu Ala Gly Gly Glu Asp Gln Ser Thr Ser Phe Ala Thr Thr Asn  
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 Ile His His His Asn Asn Thr Thr Asn Ser Gly Ser Asn Gly Gly Met  
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 Ser Met Thr Ser Glu Val Gly Ser Thr His Thr Val Ser His Ser His  
 195 200 205  
 Arg Asp Phe Asp Leu Asn Ile Pro Ala Leu Pro Glu Phe Arg Ser Asn  
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 Ile Met Leu Ala Arg Gly Gly Thr Thr Thr Val Asn Asn Arg His Val  
 50 55 60  
 Ser Pro Pro Pro Leu Gln Pro Gln Pro Gln Pro Thr Pro Asp Pro Ser  
 65 70 75 80  
 Thr Lys Leu Ser Tyr Lys Cys Ser Val Cys Asp Lys Ser Phe Pro Ser  
 85 90 95  
 Tyr Gln Ala Leu Gly Gly His Lys Ala Ser His Arg Lys Leu Ala Gly  
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115                      120                      125  
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 Lys Ser Phe Pro Thr Gly Gln Ala Leu Gly Gly His Lys Arg Cys His  
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 Tyr Glu Gly Asn Gly Asn Gly Asn Asn Asn Ser Asn Ser Val Val  
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 His His Arg Asp Phe Asp Leu Asn Ile Pro Ala Phe Pro Asp Phe Ser  
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 20                      25                      30

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           35                                  40                                  45  
 Glu Glu Tyr Leu Ala Leu Cys Leu Ile Met Leu Ala Arg Ser Gly Asn  
           50                                  55                                  60  
 Asn Asn Asp Lys Lys Ser Asp Ser Val Ala Thr Pro Leu Thr Thr Val  
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                                   85                                  90                                  95  
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 Thr Ser Ser Ala Ser Asn Gly Lys Asn Lys Thr His Glu Cys Ser Ile  
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 Cys His Lys Ser Phe Pro Thr Gly Gln Ala Leu Gly Gly His Lys Arg  
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 Cys His Tyr Glu Gly Ser Val Gly Ala Gly Ala Gly Ala Gly Ser Asn  
                                   165                                  170                                  175  
 Ala Val Thr Ala Ser Glu Gly Val Gly Leu Ser His Ser His His Arg  
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 Asp Phe Asp Leu Asn Leu Pro Ala Phe Pro Asp Phe Ser Lys Lys Phe  
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 Phe Val Asp Asp Glu Val Phe Ser Pro Leu Pro Ala Ala Lys Lys Pro  
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 Cys Leu Phe Lys Leu Glu Ile Pro Ser His Tyr  
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 65 70 75 80  
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 Ala Thr Glu Gln Ala Glu Gln Ser Tyr Lys Cys Ser Val Cys Asp Lys  
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 Ala Phe Ser Ser Tyr Gln Ala Leu Gly Gly His Lys Ala Ser His Arg  
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 Lys Thr Thr Thr Thr Ala Thr Ala Ala Ser Asp Asp Asn Asn Pro Ser  
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 Thr Ser Thr Ser Thr Gly Ala Val Asn Ile Ser Ala Leu Asn Pro Thr  
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 Gly Arg Ser His Val Cys Ser Ile Cys His Lys Ala Phe Pro Thr Gly  
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 Gln Ala Leu Gly Gly His Lys Arg Arg His Tyr Glu Gly Lys Leu Gly  
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 Gly Asn Ser Arg Asp Leu Gly Gly Gly Gly Gly Gly His Ser Gly  
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 Ser Val Leu Thr Thr Ser Asp Gly Gly Ala Ser Thr His Thr Leu Arg  
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 Asp Phe Asp Leu Asn Met Pro Ala Ser Pro Glu Leu Gln Leu Gly Leu  
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Ala Leu Cys Leu Leu Met Leu Ala Arg Gly Gly His His Arg Val Gln  
 65 70 75 80

Ala Pro Pro Pro Leu Ser Ala Ser Ala Pro Pro Pro Ala Gly Ala Glu  
85 90 95

Phe Lys Cys Ser Val Cys Gly Lys Ser Phe Ser Ser Tyr Gln Ala Leu  
100 105 110

Gly Gly His Lys Thr Ser His Arg Val Lys Leu Pro Thr Pro Pro Ala  
115 120 125

Ala Pro Val Leu Ala Pro Ala Pro Val Ala Ala Leu Leu Pro Ser Ala  
130 135 140

Glu Asp Arg Glu Pro Ala Thr Ser Ser Thr Ala Ala Ser Ser Asp Gly  
145 150 155 160

Met Thr Asn Arg Val His Arg Cys Ser Ile Cys Gln Lys Glu Phe Pro  
165 170 175

Thr Gly Gln Ala Leu Gly Gly His Lys Arg Lys His Tyr Asp Gly Gly  
180 185 190

Val Gly Ala Gly Ala Gly Ala Ser Ser Thr Glu Leu Leu Ala Thr Val  
195 200 205

Ala Ala Glu Ser Glu Val Gly Ser Ser Gly Asn Gly Gln Ser Ala Thr  
210 215 220

Arg Ala Phe Asp Leu Asn Leu Pro Ala Val Pro Glu Phe Val Trp Arg  
225 230 235 240

Pro Cys Ser Lys Gly Lys Lys Met Trp Asp Glu Glu Glu Glu Val Gln  
245 250 255

Ser Pro Leu Ala Phe Lys Lys Pro Arg Leu Leu Thr Ala  
260 265

<210> 20  
<211> 1020  
<212> DNA  
<213> Petunia x hybrida

<400> 20  
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aatacaaaca agaaaatttt ctctctatac ttgattgagt ttagtaaggc aaacaagaaa 180  
actatcatgg cacttgaagc attgaattct ccaactacaa caacaccacc atcattccaa 240  
tttgagaaca acgggcttaa gtaccttgag agttggacaa aaggtaaaag atcaaaaagg 300  
caacgcagca tggaacgaca gtgtactgaa gaagagtatt tagcactttg tcttatcatg 360  
ctagcacgta gcgatgggtc tggttaataac tcacgggtctc taccaccacc accactacca 420  
ccatcagttc cagtaacgtc gcaaataaac gcgacgttat tggaacagaa gaatttgtac 480  
aagtgttccg tttgtggttaa aggggtttggg tcttatcaag ctttaggttg acataaagca 540  
agtcaccgga aacttgtcag catgggagga gatgaacaat ctactacttc cactactact 600  
aacgtaacgg gaactagttc cgctaacgtt aacggtaacg gaagaactca cgaatgttca 660  
atttgtcaca agtgctttcc tactggacaa gcttttagtg gtcataaaag gtgccactat 720  
gacggtggta acggtaacgg taacggaagt gtaagtgtg ggggtgacgtc atctgaagg 780  
gtggggtcca ctattagtca tcaccgtgac tttgacttga atattccgc gttgccggag 840  
ttttggccgg gatattggtc cggcgaggat gaggtggaga gtcctcatcc agcaaagaag 900

tcaaggctat ctcttccacc taaacttgaa ttattcaaag gattatagag ggaatattga 960  
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<210> 21  
 <211> 253  
 <212> PRT  
 <213> Petunia x hybrida

<400> 21  
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 Gly Lys Arg Ser Lys Arg Gln Arg Ser Met Glu Arg Gln Cys Thr Glu  
 35 40 45  
 Glu Glu Tyr Leu Ala Leu Cys Leu Ile Met Leu Ala Arg Ser Asp Gly  
 50 55 60  
 Ser Val Asn Asn Ser Arg Ser Leu Pro Pro Pro Pro Leu Pro Pro Ser  
 65 70 75 80  
 Val Pro Val Thr Ser Gln Ile Asn Ala Thr Leu Leu Glu Gln Lys Asn  
 85 90 95  
 Leu Tyr Lys Cys Ser Val Cys Gly Lys Gly Phe Gly Ser Tyr Gln Ala  
 100 105 110  
 Leu Gly Gly His Lys Ala Ser His Arg Lys Leu Val Ser Met Gly Gly  
 115 120 125  
 Asp Glu Gln Ser Thr Thr Ser Thr Thr Thr Asn Val Thr Gly Thr Ser  
 130 135 140  
 Ser Ala Asn Val Asn Gly Asn Gly Arg Thr His Glu Cys Ser Ile Cys  
 145 150 155 160  
 His Lys Cys Phe Pro Thr Gly Gln Ala Leu Gly Gly His Lys Arg Cys  
 165 170 175  
 His Tyr Asp Gly Gly Asn Gly Asn Gly Asn Gly Ser Val Ser Val Gly  
 180 185 190  
 Val Thr Ser Ser Glu Gly Val Gly Ser Thr Ile Ser His His Arg Asp  
 195 200 205  
 Phe Asp Leu Asn Ile Pro Ala Leu Pro Glu Phe Trp Pro Gly Phe Gly  
 210 215 220  
 Ser Gly Glu Asp Glu Val Glu Ser Pro His Pro Ala Lys Lys Ser Arg  
 225 230 235 240  
 Leu Ser Leu Pro Pro Lys Leu Glu Leu Phe Lys Gly Leu  
 245 250

<210> 22  
 <211> 786  
 <212> DNA  
 <213> Triticum aestivum

<400> 22  
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 caggggtggg ccaagaggaa gcgatcgccg cgccagcgct ccgaggagga gaacctcgcg 180  
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 tctgatgccg ctgctgcccc actcgtggcc ctcccggccg tcgccgccat cctgccgtcc 420  
 gccgagccgg ccacgtcgtc caccgccgcg tcctccgacg gcgcgaccaa cagagtccac 480  
 aggtgctcca tctgccaaaa ggagttcccg actgggcagg cgctcggcgg gcacaagagg 540  
 aagcactacg acggaggcgt gggcgccgcc gcctcgtcga ccgagcttct ggccgcccg 600  
 gccgccgagt ctgaggtggg gaggaccggc aacgggagct ccgccgcccg ggccttcgac 660  
 ctgaacattc cggccgtgcc ggagttcgtg tggaggccgt gcgccaagg caagatgatg 720  
 tgggaggacg atgaggaggt gcagagcccc ctgccttca agaagcctcg gcttctcacc 780  
 gcttga 786

<210> 23  
 <211> 261  
 <212> PRT  
 <213> Triticum aestivum

<400> 23  
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 His Gln Leu Asp Val Glu Ala Ala Ala Val Ser Ser Ala Thr Ser  
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 Gly Glu Glu Ser Gly His Val Leu Gln Gly Trp Ala Lys Arg Lys Arg  
 35 40 45  
 Ser Arg Arg Gln Arg Ser Glu Glu Glu Asn Leu Ala Leu Cys Leu Leu  
 50 55 60  
 Met Leu Ser Arg Gly Gly Lys Gln Arg Val Gln Ala Pro Gln Pro Glu  
 65 70 75 80  
 Ser Phe Ala Ala Pro Val Pro Ala Glu Phe Lys Cys Ser Val Cys Gly  
 85 90 95  
 Lys Ser Phe Ser Ser Tyr Gln Ala Leu Gly Gly His Lys Thr Ser His  
 100 105 110  
 Arg Val Lys Gln Pro Ser Pro Pro Ser Asp Ala Ala Ala Ala Pro Leu  
 115 120 125  
 Val Ala Leu Pro Ala Val Ala Ala Ile Leu Pro Ser Ala Glu Pro Ala  
 130 135 140  
 Thr Ser Ser Thr Ala Ala Ser Ser Asp Gly Ala Thr Asn Arg Val His  
 145 150 155 160  
 Arg Cys Ser Ile Cys Gln Lys Glu Phe Pro Thr Gly Gln Ala Leu Gly

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<210> 24
<211> 1026
<212> DNA
<213> Capsicum annum
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<400>	24						
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accggtttcaa	ttttagagcgg	acggccaaca	gcttcgatat	atcgaaaact	ggaggaagg		180
aaagagatct	aaaaggtcac	gcagcatgga	gcaccagcct	actgaggaag	aatacttagc		240
gctttgtttg	atcatgtttg	cacgtagcgg	tggtccggt	aatcatcaac	gatctctacc		300
accgccggct	ccggtgatga	aactgcacgc	gccgtcgcta	tcatcggcgg	cggaggagga		360
gaaggagaag	atggtgtata	agtgttcggt	tttgtgtaag	ggatttgggt	cttatcaagg		420
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aagtggaagg	actcacgagt	gttcgatttg	tcacaagtg	tttccactg	gacaagcttt		600
aggtggacac	aaaaggtgtc	actacgacgg	cggtagtcgt	aacggaacg	ctaacagtgg		660
cgttagtgct	agcgttgag	tgacgtcatc	ggagggtgtg	gggtccacag	tcagtcaccg		720
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tgaattatct	caacattaat	gggaatttga	ttgttaggat	ttactatttt	ggtagacaaa		900
attatactat	gtaagtttta	attttcattg	tgggtgggag	caaaattttt	aattttttgt		960
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ataaaaaa							1026

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<210> 25
<211> 261
<212> PRT
<213> Capsicum annum
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<400> 25
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Pro Phe Gln Phe Glu Ser Asp Gly Gln Gln Leu Arg Tyr Ile Glu Asn
20          25          30

Trp Arg Lys Gly Lys Arg Ser Lys Arg Ser Arg Ser Met Glu His Gln

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35                      40                      45  
 Pro Thr Glu Glu Glu Tyr Leu Ala Leu Cys Leu Ile Met Leu Ala Arg  
 50                      55                      60  
 Ser Gly Gly Ser Val Asn His Gln Arg Ser Leu Pro Pro Pro Ala Pro  
 65                      70                      75                      80  
 Val Met Lys Leu His Ala Pro Ser Ser Ser Ser Ala Ala Glu Glu Glu  
 85                      90                      95  
 Lys Glu Lys Met Val Tyr Lys Cys Ser Val Cys Gly Lys Gly Phe Gly  
 100                      105                      110  
 Ser Tyr Gln Ala Leu Gly Gly His Lys Ala Ser His Arg Lys Leu Val  
 115                      120                      125  
 Pro Gly Gly Asp Asp Gln Ser Thr Thr Ser Thr Thr Thr Asn Ala Thr  
 130                      135                      140  
 Gly Thr Thr Thr Ser Val Asn Gly Asn Gly Asn Arg Ser Gly Arg Thr  
 145                      150                      155                      160  
 His Glu Cys Ser Ile Cys His Lys Cys Phe Pro Thr Gly Gln Ala Leu  
 165                      170                      175  
 Gly Gly His Lys Arg Cys His Tyr Asp Gly Gly Ile Gly Asn Gly Asn  
 180                      185                      190  
 Ala Asn Ser Gly Val Ser Ala Ser Val Gly Val Thr Ser Ser Glu Gly  
 195                      200                      205  
 Val Gly Ser Thr Val Ser His Arg Asp Phe Asp Leu Asn Ile Pro Ala  
 210                      215                      220  
 Leu Pro Glu Phe Trp Leu Gly Phe Gly Ser Gly Glu Asp Glu Val Glu  
 225                      230                      235                      240  
 Ser Pro His Pro Ala Lys Lys Ser Arg Leu Cys Leu Pro Pro Lys Tyr  
 245                      250                      255  
 Glu Leu Phe Gln His  
 260

<210> 26  
 <211> 1068  
 <212> DNA  
 <213> Arabidopsis thaliana

<400> 26  
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 tggccctcga agcgatgaac actccaactt cttctttcac cagaatcgaa acgaaagaag 180  
 atttgatgaa cgaacgctgt ttcatgtgag cgtggcttaa acgcaaagcg tccaaacgct 240  
 agcgtttctc cagcccttct tcgtcttctt cctcacgccc tcgatctcga cccaaatccc 300  
 agaatcaaga tcttacggaa gaagagtatc tcgctctttg tctcctcatg ctccgctaaag 360  
 atcaaccgctc gcaaacgcga tttcatcaac agtcgcaatc gttaacgccc ccgccagaat 420  
 caaagaacct tccgtacaag tgtaacgtct gtgaaaaagc gtttctctcc tatcaggctt 480

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taggcggtca caaagcaagt caccgaatca aaccaccaac cgtaatctca acaaccgccc 540
atgattcaac agctccgacc atctccatcg tcgccggaga aaaacatccg attgctgcct 600
ccggaaagat ccacgagtgt tcaatctgtc ataaagtgtt tccgacgggt caagctttag 660
gcgggtcacaa acgttgtcac tacgaaggca acctcggcgg cggaggagga ggaggaagca 720
aatcaatcag tcacagtgga agcgtgtcga gcacggtatc ggaagaaagg agccaccgtg 780
gattcatcga tctaaacctc ccggcggttac ctgaactcag ccttcatcac aatccaatcg 840
tcgacgaaga gatcttgagt ccgttgaccg gtaaaaaacc gcttttggtg accgatcacg 900
accaagtcac caagaaagaa gatttatctt taaaaatcta atactcgact attaattctt 960
gtgtgatttt tttcggtaca accatagttt cattttcatt tttttagtta caaattttta 1020
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<210> 27  
 <211> 273  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 27  
 Met Ala Leu Glu Ala Met Asn Thr Pro Thr Ser Ser Phe Thr Arg Ile  
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 Glu Thr Lys Glu Asp Leu Met Asn Asp Ala Val Phe Ile Glu Pro Trp  
 20 25 30  
 Leu Lys Arg Lys Arg Ser Lys Arg Gln Arg Ser His Ser Pro Ser Ser  
 35 40 45  
 Ser Ser Ser Ser Pro Pro Arg Ser Arg Pro Lys Ser Gln Asn Gln Asp  
 50 55 60  
 Leu Thr Glu Glu Glu Tyr Leu Ala Leu Cys Leu Leu Met Leu Ala Lys  
 65 70 75 80  
 Asp Gln Pro Ser Gln Thr Arg Phe His Gln Gln Ser Gln Ser Leu Thr  
 85 90 95  
 Pro Pro Pro Glu Ser Lys Asn Leu Pro Tyr Lys Cys Asn Val Cys Glu  
 100 105 110  
 Lys Ala Phe Pro Ser Tyr Gln Ala Leu Gly Gly His Lys Ala Ser His  
 115 120 125  
 Arg Ile Lys Pro Pro Thr Val Ile Ser Thr Thr Ala Asp Asp Ser Thr  
 130 135 140  
 Ala Pro Thr Ile Ser Ile Val Ala Gly Glu Lys His Pro Ile Ala Ala  
 145 150 155 160  
 Ser Gly Lys Ile His Glu Cys Ser Ile Cys His Lys Val Phe Pro Thr  
 165 170 175  
 Gly Gln Ala Leu Gly Gly His Lys Arg Cys His Tyr Glu Gly Asn Leu  
 180 185 190  
 Gly Gly Gly Gly Gly Gly Gly Ser Lys Ser Ile Ser His Ser Gly Ser  
 195 200 205  
 Val Ser Ser Thr Val Ser Glu Glu Arg Ser His Arg Gly Phe Ile Asp  
 210 215 220



Leu Asn Leu Pro Ala Leu Pro Glu Leu Ser Leu His His Asn Pro Ile  
 225 230 235 240

Val Asp Glu Glu Ile Leu Ser Pro Leu Thr Gly Lys Lys Pro Leu Leu  
 245 250 255

Leu Thr Asp His Asp Gln Val Ile Lys Lys Glu Asp Leu Ser Leu Lys  
 260 265 270

Ile

<210> 28  
 <211> 976  
 <212> DNA  
 <213> Arabidopsis thaliana

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 ctgtttcaag attcagcact agggtttcat ggaagcaaag gcaaacgac taagcgatca 180  
 agatctgaat togaccgtca gagtctcacg gaggatgaat atatcgcttt atgtctcatg 240  
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 cctcctctgc ttctcctctc tctactccg atctacaagt gtagcgtctg tgacaaggcg 360  
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 actcaatctg ccggaggaga tgagctgtcg acatcgctcg cgataaccac gtctgggtata 480  
 tccggtggcg ggggagggaag tgtgaagtcg cacgtttgct ctatctgtca taaatcgttc 540  
 gccaccggtc aagctctcgg cggccacaaa cggtgccact acgaaggaaa gaacggaggc 600  
 ggtgtgagta gtagcgtgtc gaattctgaa gatgtggggt ctacaagcca cgtcagcagt 660  
 ggccaccgtg gggttgacct caacataccg ccgataccgg aattctcgat ggtcaacgga 720  
 gacgaagagg tgatgagtcc tatgccggcg aagaaactcc gggttgactt cccggagaaa 780  
 ccctaaacat aaacctagga aaaactttac agaattcatt ttataggaaa ttgttttact 840  
 gtatatacaa atatcgattt tgattgatgt tcttcttcac tgaaaaatta tgattctttg 900  
 ttgtataatt gatgtttctg aaaaagatat aactttttat tgtttcacac gtatcaaaa 960  
 ttgcttgat acatca 976

<210> 29  
 <211> 238  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 29  
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 Thr Leu Phe Gln Asp Ser Ala Leu Gly Phe His Gly Ser Lys Gly Lys  
 20 25 30  
 Arg Ser Lys Arg Ser Arg Ser Glu Phe Asp Arg Gln Ser Leu Thr Glu  
 35 40 45  
 Asp Glu Tyr Ile Ala Leu Cys Leu Met Leu Leu Ala Arg Asp Gly Asp  
 50 55 60  
 Arg Asn Arg Asp Leu Asp Leu Pro Ser Ser Ser Ser Ser Pro Pro Leu  
 65 70 75 80

Leu Pro Pro Leu Pro Thr Pro Ile Tyr Lys Cys Ser Val Cys Asp Lys  
 85 90 95  
 Ala Phe Ser Ser Tyr Gln Ala Leu Gly His Lys Ala Ser His Arg  
 100 105 110  
 Lys Ser Phe Ser Leu Thr Gln Ser Ala Gly Gly Asp Glu Leu Ser Thr  
 115 120 125  
 Ser Ser Ala Ile Thr Thr Ser Gly Ile Ser Gly Gly Gly Gly Ser  
 130 135 140  
 Val Lys Ser His Val Cys Ser Ile Cys His Lys Ser Phe Ala Thr Gly  
 145 150 155 160  
 Gln Ala Leu Gly Gly His Lys Arg Cys His Tyr Glu Gly Lys Asn Gly  
 165 170 175  
 Gly Gly Val Ser Ser Ser Val Ser Asn Ser Glu Asp Val Gly Ser Thr  
 180 185 190  
 Ser His Val Ser Ser Gly His Arg Gly Phe Asp Leu Asn Ile Pro Pro  
 195 200 205  
 Ile Pro Glu Phe Ser Met Val Asn Gly Asp Glu Glu Val Met Ser Pro  
 210 215 220  
 Met Pro Ala Lys Lys Leu Arg Phe Asp Phe Pro Glu Lys Pro  
 225 230 235

<210> 30  
 <211> 718  
 <212> DNA  
 <213> Arabidopsis thaliana

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 gctctttggc tccttatgct cgctcgtggc tcctccgac atcactctcc accgtcggat 240  
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<210> 31  
 <211> 215  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 31  
 Met Ala Leu Asp Thr Leu Asn Ser Pro Thr Ser Thr Thr Thr Thr Thr  
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 35 40 45  
 Gln Pro Asn Pro Pro Pro Ser Glu Glu Glu Tyr Leu Ala Leu Cys Leu  
 50 55 60  
 Leu Met Leu Ala Arg Gly Ser Ser Asp His His Ser Pro Pro Ser Asp  
 65 70 75 80  
 His His Ser Leu Ser Pro Leu Ser Asp His Gln Lys Asp Tyr Lys Cys  
 85 90 95  
 Ser Val Cys Gly Lys Ser Phe Pro Ser Tyr Gln Ala Leu Gly Gly His  
 100 105 110  
 Lys Thr Ser His Arg Lys Pro Val Ser Val Asp Val Asn Asn Ser Asn  
 115 120 125  
 Gly Thr Val Thr Asn Asn Gly Asn Ile Ser Asn Gly Leu Val Gly Gln  
 130 135 140  
 Ser Gly Lys Thr His Asn Cys Ser Ile Cys Phe Lys Ser Phe Pro Ser  
 145 150 155 160  
 Gly Gln Ala Leu Gly Gly His Lys Arg Cys His Tyr Asp Gly Gly Asn  
 165 170 175  
 Gly Asn Ser Asn Gly Asp Asn Ser His Lys Phe Asp Leu Asn Leu Pro  
 180 185 190  
 Ala Asp Gln Val Ser Asp Glu Thr Ile Gly Lys Ser Gln Leu Ser Gly  
 195 200 205  
 Glu Glu Thr Lys Ser Val Leu  
 210 215

<210> 32  
 <211> 702  
 <212> DNA  
 <213> Arabidopsis thaliana

<400> 32  
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 tctgatcttc atcataacca ccgtctcact gaggaagagt atctagcttt ctgtctcatg 180  
 cttcttgctc gggatggcgg cgatcttgac tctgtgacgg ttgctggagaa gccgagttat 240  
 aagtgtggcg tttgttacaa gacgttttcg tcttaccaag ctctcggcgg tcataaagcg 300  
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 aaatctcacg tttgttcggt ttgctgggaaa tctttcgcca ccggtcaagc tctcggcggc 420  
 cacaagcggg gccactacga tgggtggcgtt tcgaactcgg aaggtgtggg gtctactagc 480  
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 tttgttgat tctattacca atacacaata cgattcaatt cc 702

<210> 33  
 <211> 193  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 33  
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 Arg Ser Arg Ser Asp Leu His His Asn His Arg Leu Thr Glu Glu Glu  
 35 40 45  
 Tyr Leu Ala Phe Cys Leu Met Leu Leu Ala Arg Asp Gly Gly Asp Leu  
 50 55 60  
 Asp Ser Val Thr Val Ala Glu Lys Pro Ser Tyr Lys Cys Gly Val Cys  
 65 70 75 80  
 Tyr Lys Thr Phe Ser Ser Tyr Gln Ala Leu Gly Gly His Lys Ala Ser  
 85 90 95  
 His Arg Ser Leu Tyr Gly Gly Gly Glu Asn Asp Lys Ser Thr Pro Ser  
 100 105 110  
 Thr Ala Val Lys Ser His Val Cys Ser Val Cys Gly Lys Ser Phe Ala  
 115 120 125  
 Thr Gly Gln Ala Leu Gly Gly His Lys Arg Cys His Tyr Asp Gly Gly  
 130 135 140  
 Val Ser Asn Ser Glu Gly Val Gly Ser Thr Ser His Val Ser Ser Ser  
 145 150 155 160  
 Ser His Arg Gly Phe Asp Leu Asn Ile Ile Pro Val Gln Gly Phe Ser  
 165 170 175  
 Pro Asp Asp Glu Val Met Ser Pro Met Ala Thr Lys Lys Pro Arg Leu  
 180 185 190  
 Lys

<210> 34  
 <211> 1157  
 <212> DNA  
 <213> Arabidopsis thaliana

<400> 34  
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 tcttctccgg tatcgtgaag aaatggagcc tgagaatctc gagcaatggg ctaaaagaaa 180  
 acgaacaaaa cgtcaacggt ttgatcacgg tcatcagaat caagaaacga acaagaacct 240  
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 acaatctcct cctcttctc ctctaccgtc acgtgcgtca ccgtccgac accgagatta 360  
 caagtgtacg gtctgtggga agtccttttc gtcataccaa gccttaggtg gacacaagac 420

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gagtcaccgg aaaccgacga acactagtag cacttccggt aaccaagaac tgtctaataa 480
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tagtcaaagc ggaaagattc acacttgctc aatctgtttc aagtcgtttg cgtctgggtca 600
agccttaggt ggacacaaac ggtgtcacta tgacgggtggc aacaacggta acggtaacgg 660
aagtagcagc aacagcgtag aactcgtcgc tggtagtgac gtcagcgatg ttgataatga 720
gagatggtcc gaagaaagtg cgatcggtgg ccaccgtgga tttgacctaa acttaccggc 780
tgatcaagtc tcagtgaaga cttcttaacg ttgactgagt ttgaggaaaa agtcaactat 840
caagcgaaga aagggttagt ggacggtgaa gattaacggt cgtttctttc cagttgcttc 900
ggtttgagct tgactgggtc tgtaatgaaa atgattggag tggacttggc attattatta 960
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tgggatacac aaatattttt tttttttaca aagaaaataa taatgcagag atggatgatt 1080
ggatcgtaga cgttattata tagtggacca ttctgtaatc gtgaattatt attatttgtt 1140
agaaatttaa ttttcgt 1157

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<210> 35  
 <211> 245  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 35  
 Met Ala Leu Glu Thr Leu Asn Ser Pro Thr Ala Thr Thr Thr Ala Arg  
 1 5 10 15  
 Pro Leu Leu Arg Tyr Arg Glu Glu Met Glu Pro Glu Asn Leu Glu Gln  
 20 25 30  
 Trp Ala Lys Arg Lys Arg Thr Lys Arg Gln Arg Phe Asp His Gly His  
 35 40 45  
 Gln Asn Gln Glu Thr Asn Lys Asn Leu Pro Ser Glu Glu Glu Tyr Leu  
 50 55 60  
 Ala Leu Cys Leu Leu Met Leu Ala Arg Gly Ser Ala Val Gln Ser Pro  
 65 70 75 80  
 Pro Leu Pro Pro Leu Pro Ser Arg Ala Ser Pro Ser Asp His Arg Asp  
 85 90 95  
 Tyr Lys Cys Thr Val Cys Gly Lys Ser Phe Ser Ser Tyr Gln Ala Leu  
 100 105 110  
 Gly Gly His Lys Thr Ser His Arg Lys Pro Thr Asn Thr Ser Ile Thr  
 115 120 125  
 Ser Gly Asn Gln Glu Leu Ser Asn Asn Ser His Ser Asn Ser Gly Ser  
 130 135 140  
 Val Val Ile Asn Val Thr Val Asn Thr Gly Asn Gly Val Ser Gln Ser  
 145 150 155 160  
 Gly Lys Ile His Thr Cys Ser Ile Cys Phe Lys Ser Phe Ala Ser Gly  
 165 170 175  
 Gln Ala Leu Gly Gly His Lys Arg Cys His Tyr Asp Gly Gly Asn Asn  
 180 185 190  
 Gly Asn Gly Asn Gly Ser Ser Ser Asn Ser Val Glu Leu Val Ala Gly  
 195 200 205

Ser Asp Val Ser Asp Val Asp Asn Glu Arg Trp Ser Glu Glu Ser Ala  
210 215 220

Ile Gly Gly His Arg Gly Phe Asp Leu Asn Leu Pro Ala Asp Gln Val  
225 230 235 240

Ser Val Thr Thr Ser  
245

<210> 36  
<211> 1213  
<212> DNA  
<213> Oryza sativa

<400> 36  
aattcggcac gaggccacac agcaaccagc cagctgccac actagcttga ggcgagcgag 60  
cgaagcttag ctagecgata gaacaagtcg tcgatctgct tgctgctttt gtgaattgag 120  
gtggaagcat gtcgagcgcg tcgtccatgg aagcgctcca cgccgcggtg ctcaaggagg 180  
agcagcagca gcacgaggtg gaggaggcga cggctcgtgac gagcagcagc gccacgagcg 240  
gggaggaggg cggacacctg ccccaggggt gggcgaagcg gaagcgggtcg cgccgccagc 300  
gatcggagga ggagaacctc gcgctctgcc tcctcatgct cgcccgcggc ggccaccacc 360  
gcgtccaggc gccgcctccg ctctcggctt cgccgccccg gccggcagggt gcggagttca 420  
agtgtccgtg ctgcggcaag tccttcagct cctaccaggc gctcggcggc cacaagacga 480  
gccaccgggt caagctgccc actccgcccc cagctcccgt cttgggtccc gcccccgctg 540  
ccgccttgct gccttcggcc gaggaccgag agccagccac gtcattccacc gccgcgtcct 600  
ccgacggcat gaccaacaga gtccacaggt gttccatctg ccagaaggag ttccccaccg 660  
ggcaggcgct cggcggggcac aagagggaag actacgacgg tggcgtaggc gccggcgccg 720  
gcgcattctt aaccgagctc ctggccacgg tggccgcca gtccgaggtg ggaagctccg 780  
gcaacggcca gtccgccacc cgggcgttcg acctcaacct ccggcgcggtg ccggagttcg 840  
tgtggcgccc gtgctccaag ggcaagaaga tgtgggacga ggaggaggag gtccagagcc 900  
ccctcgccctt caagaagccc cggcttctca ccgcgtaatt cagcagctgc acggatccga 960  
tccgtcagag tttttgtcta gggagtgaat ttacgtcgaa acacactatt cgttgattcg 1020  
ttttgtgccg ctattgttta atttgttcct gctttgttac agagcaagcg agtgatacat 1080  
agccatacat acagtcatat agatataggt ctagctcttc cttggttctt tgtaacactg 1140  
gaactgtacc tgtattcttt acactttgtt ctttgacagt catatatattg agaccacaaa 1200  
aaaaaaaaaaa aaa 1213

<210> 37  
<211> 269  
<212> PRT  
<213> Oryza sativa

<400> 37  
Met Ser Ser Ser Ala Ser Ser Met Glu Ala Leu His Ala Ala Val Leu Lys  
1 5 10 15  
Glu Glu Gln Gln Gln His Glu Val Glu Glu Ala Thr Val Val Thr Ser  
20 25 30  
Ser Ser Ala Thr Ser Gly Glu Glu Gly Gly His Leu Pro Gln Gly Trp  
35 40 45  
Ala Lys Arg Lys Arg Ser Arg Arg Gln Arg Ser Glu Glu Glu Asn Leu  
50 55 60  
Ala Leu Cys Leu Leu Met Leu Ala Arg Gly Gly His His Arg Val Gln  
65 70 75 80

Ala Pro Pro Pro Leu Ser Ala Ser Ala Pro Pro Pro Ala Gly Ala Glu  
85 90 95  
Phe Lys Cys Ser Val Cys Gly Lys Ser Phe Ser Ser Tyr Gln Ala Leu  
100 105 110  
Gly Gly His Lys Thr Ser His Arg Val Lys Leu Pro Thr Pro Pro Ala  
115 120 125  
Ala Pro Val Leu Ala Pro Ala Pro Val Ala Ala Leu Leu Pro Ser Ala  
130 135 140  
Glu Asp Arg Glu Pro Ala Thr Ser Ser Thr Ala Ala Ser Ser Asp Gly  
145 150 155 160  
Met Thr Asn Arg Val His Arg Cys Ser Ile Cys Gln Lys Glu Phe Pro  
165 170 175  
Thr Gly Gln Ala Leu Gly Gly His Lys Arg Lys His Tyr Asp Gly Gly  
180 185 190  
Val Gly Ala Gly Ala Gly Ala Ser Ser Thr Glu Leu Leu Ala Thr Val  
195 200 205  
Ala Ala Glu Ser Glu Val Gly Ser Ser Gly Asn Gly Gln Ser Ala Thr  
210 215 220  
Arg Ala Phe Asp Leu Asn Leu Pro Ala Val Pro Glu Phe Val Trp Arg  
225 230 235 240  
Pro Cys Ser Lys Gly Lys Lys Met Trp Asp Glu Glu Glu Glu Val Gln  
245 250 255  
Ser Pro Leu Ala Phe Lys Lys Pro Arg Leu Leu Thr Ala  
260 265

<210> 38  
<211> 528  
<212> DNA  
<213> Arabidopsis thaliana

<400> 38  
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ctaattgatgt tatctcgaag ttctcgtggtc aaacaaatcg atgtaaagca atctaccgga 120  
agcaaaacga accataataa ccacttcgaa tgcaaaacgt gtaaccggaa atttgattcc 180  
ttccaagctc ttggaggtca tagagctagc cacaagaaac ctaagctgat cgttgaccaa 240  
gaacaggtga agcatcgtaa caaagagaat gatatgcata agtgtacaat ttgcgatcaa 300  
atgtttggga ccggtcaagc tctaggcggc cacatgagaa agcataggac gagcatgata 360  
accgagcaat cgattgtccc ttctgtggtt tattccagac cggtttttaa tcgttgcagt 420  
agcagcaagg agatcttgga cttaaatcta actccattgg aaaatgatct tgtgttaate 480  
tttggaaga atttggttcc acaaatgat ttgaagtttg tgaattag 528

<210> 39  
<211> 175  
<212> PRT  
<213> Arabidopsis thaliana

&lt;400&gt; 39

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Met Lys Arg Asp Arg Ser Asp Tyr Glu Glu Ser Met Lys His Ile Asp
1          5          10          15

Ile Val Glu Ser Leu Met Met Leu Ser Arg Ser Phe Val Val Lys Gln
          20          25          30

Ile Asp Val Lys Gln Ser Thr Gly Ser Lys Thr Asn His Asn Asn His
          35          40          45

Phe Glu Cys Lys Thr Cys Asn Arg Lys Phe Asp Ser Phe Gln Ala Leu
          50          55          60

Gly Gly His Arg Ala Ser His Lys Lys Pro Lys Leu Ile Val Asp Gln
65          70          75          80

Glu Gln Val Lys His Arg Asn Lys Glu Asn Asp Met His Lys Cys Thr
          85          90          95

Ile Cys Asp Gln Met Phe Gly Thr Gly Gln Ala Leu Gly Gly His Met
          100          105          110

Arg Lys His Arg Thr Ser Met Ile Thr Glu Gln Ser Ile Val Pro Ser
          115          120          125

Val Val Tyr Ser Arg Pro Val Phe Asn Arg Cys Ser Ser Ser Lys Glu
          130          135          140

Ile Leu Asp Leu Asn Leu Thr Pro Leu Glu Asn Asp Leu Val Leu Ile
145          150          155          160

Phe Gly Lys Asn Leu Val Pro Gln Ile Asp Leu Lys Phe Val Asn
          165          170          175

```

&lt;210&gt; 40

&lt;211&gt; 820

&lt;212&gt; DNA

&lt;213&gt; Saccharum officinarum

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (406)..(406)

&lt;223&gt; n can be any nucleotide

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (581)..(582)

&lt;223&gt; n can be any nucleotide

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (589)..(589)

&lt;223&gt; n can be any nucleotide

&lt;400&gt; 40

```

cctaaccagc attagctttt caaatcaaca agcctcgccg tgaccgatcg atggccatca      60
cccacgacga ctacgtctcc ctctgcctca tggcgctcgc agccgcggga ggcggaggcc      120

```



```

aagctgggtt aacaacgcag tacgctctga acacggctgc ctggacagcg acggcgcaag 180
agtcgcgagct ccgcttccgg tgctccgtct gtggcaaggc cttcgcgtcg caccaggcac 240
tgggcgggca caaggccagc caccgcaagc cgacgctcgt acaggcacat gcgtcgtcct 300
cagccggagg cgcgcgctcg tcgtcggtaa caatgacctc ggccgtaggc agcagtgggc 360
aggggaggca caggtgcacg gtgtgccatc ggagcttcgc gacgngcaa gcgctcggcg 420
ggcacaagag gtgccattac tgggacgggc tctcgggtgc gtcaccgcg tcgtcggcgc 480
catcggggtc cgggtcgacc gtcaagggtc ttgatctgaa tttggtgccc gtgccgccc 540
cgatggccgc caacgctcgc acaagggtgg gagaggagaa nnaagtcana aacccttggc 600
ggtcaagaga aggcggcttg ccggtccgtc ttggacccta atttaacgat ttagaagtcc 660
tttttttaat aattaagagt tcttttgaag aaggttgtaa agttttcgaa ccttggtctt 720
ttaatggatt tgggtgctgg cgaaatttta aaactggatt taaatttgcg ctcactcttt 780
ttttttatatt ttacaccct tttttttttt tagaagaaga 820

```

&lt;210&gt; 41

&lt;211&gt; 1509

&lt;212&gt; DNA

&lt;213&gt; Arabidopsis thaliana

&lt;400&gt; 41

```

ttcctttctc ttctctctc tctctcttca ccatgactga tccttattcc aatttcttca 60
cagactgggt caagtctaatt ccttttcacc attaccctaa ttctccact aaccctctc 120
ctcactctct tctctctgtt actcctccct cttccttctt cttcttccct caatccggag 180
acctccgccc tccaccgccc ccaccaactc ctctccttcc tctctctctc cgagaagccc 240
tccctctcct cagcctcagc cccgccaaca aacaacaaga ccaccatcac aaccatgacc 300
accttattca agaaccacct tcaacctcca tggatgtcga ctacgatcat caccatcaag 360
atgatcatca taacctcgat gacgatgacc atgacgtcac cgttgctctt cacataggcc 420
ttccaagccc tagtgcctca gagatggcct ctttgcctcat gatgtcttct tcttctctt 480
cctcgaggac cactcatcat caccaggaca tgaatcaca gaaagacctc gaccatgagt 540
acagccacgg agctgtcgga ggaggagaag atgacgatga agattcagtc ggccggagacg 600
gcggtgtag aatcagcaga ctcaacaagg gtcaatattg gatccctaca ccttctcaga 660
ttctcattgg cctactcag ttctcatgtc ctggttgctt caaaaccttc aacagataca 720
ataacatgca gatgcatacg tggggacatg gatcacaata cagaaaagga cctgaatctc 780
taagggaac acaaccaaca ggaatgctaa ggcttccgtg ctattgctgc gccccaggct 840
gtcgcaacaa cattgacat ccaagggcaa agcctctcaa agaactcaga acccttcaaa 900
cacattacaa gagaaaacat gggatcaaac ctttcatgtg taggaaatgt ggaaaggctt 960
tcgcagtcgg aggggactgg agaacacatg agaagaattg tggcaaacct tgggtattgca 1020
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taagtactaa gtaattcggg atatatatta attataagaa acctaaatct atggaccaag 1260
ttttgatgga ggtagggtt ttcaaactaa aagctatata atctaattga tcataggaaa 1320
aaaatgaatc aagagcactt ggaaaatttt aaattgtatc tttagcttcc tagttaaatt 1380
tattgcaaga caatgtagca gtctaacc aaaggttccc aacggtttat ttctatttgt 1440
atattatttt gtcattagct tcaactttcg ttaattcgaa ggacataact tataaatgtt 1500
taaattatg 1509

```

&lt;210&gt; 42

&lt;211&gt; 383

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis thaliana

&lt;400&gt; 42

```

Met Thr Asp Pro Tyr Ser Asn Phe Phe Thr Asp Trp Phe Lys Ser Asn
1           5           10          15

```

```

Pro Phe His His Tyr Pro Asn Ser Ser Thr Asn Pro Ser Pro His Pro
20          25          30

```

Leu Pro Pro Val Thr Pro Pro Ser Ser Phe Phe Phe Phe Pro Gln Ser  
 35 40 45  
 Gly Asp Leu Arg Arg Pro Pro Pro Pro Thr Pro Pro Ser Pro  
 50 55 60  
 Pro Leu Arg Glu Ala Leu Pro Leu Leu Ser Leu Ser Pro Ala Asn Lys  
 65 70 75 80  
 Gln Gln Asp His His His Asn His Asp His Leu Ile Gln Glu Pro Pro  
 85 90 95  
 Ser Thr Ser Met Asp Val Asp Tyr Asp His His His Gln Asp Asp His  
 100 105 110  
 His Asn Leu Asp Asp Asp Asp His Asp Val Thr Val Ala Leu His Ile  
 115 120 125  
 Gly Leu Pro Ser Pro Ser Ala Gln Glu Met Ala Ser Leu Leu Met Met  
 130 135 140  
 Ser Ser Ser Ser Ser Ser Ser Arg Thr Thr His His His Glu Asp Met  
 145 150 155 160  
 Asn His Lys Lys Asp Leu Asp His Glu Tyr Ser His Gly Ala Val Gly  
 165 170 175  
 Gly Gly Glu Asp Asp Asp Glu Asp Ser Val Gly Gly Asp Gly Gly Cys  
 180 185 190  
 Arg Ile Ser Arg Leu Asn Lys Gly Gln Tyr Trp Ile Pro Thr Pro Ser  
 195 200 205  
 Gln Ile Leu Ile Gly Pro Thr Gln Phe Ser Cys Pro Val Cys Phe Lys  
 210 215 220  
 Thr Phe Asn Arg Tyr Asn Asn Met Gln Met His Met Trp Gly His Gly  
 225 230 235 240  
 Ser Gln Tyr Arg Lys Gly Pro Glu Ser Leu Arg Gly Thr Gln Pro Thr  
 245 250 255  
 Gly Met Leu Arg Leu Pro Cys Tyr Cys Cys Ala Pro Gly Cys Arg Asn  
 260 265 270  
 Asn Ile Asp His Pro Arg Ala Lys Pro Leu Lys Asp Phe Arg Thr Leu  
 275 280 285  
 Gln Thr His Tyr Lys Arg Lys His Gly Ile Lys Pro Phe Met Cys Arg  
 290 295 300  
 Lys Cys Gly Lys Ala Phe Ala Val Arg Gly Asp Trp Arg Thr His Glu  
 305 310 315 320  
 Lys Asn Cys Gly Lys Leu Trp Tyr Cys Ile Cys Gly Ser Asp Phe Lys  
 325 330 335  
 His Lys Arg Ser Leu Lys Asp His Ile Lys Ala Phe Gly Asn Gly His

340 345 350

Gly Ala Tyr Gly Ile Asp Gly Phe Asp Glu Glu Asp Glu Pro Ala Ser  
355 360 365

Glu Val Glu Gln Leu Asp Asn Asp His Glu Ser Met Gln Ser Lys  
370 375 380

<210> 43  
<211> 1303  
<212> DNA  
<213> Arabidopsis thaliana

<400> 43  
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taatccagct tgttcgaatc tcttcaacaa tggatgtgac cataatagct tcaactattc 180  
cacttctctc tcttacattt acaactctca cggtagctac tattactcta ataccacaaa 240  
ccctaattac attaatcata ctcataccac ttccacttcc cctaactcac cccactaag 300  
agaagctctt cctcttctta gcttaagccc cataaggcac caagaacaac aagaccaaca 360  
ctatttcatg gacacccatc aaattagctc ttcaaacttt cttgatgatc ctcttgtgac 420  
tgtggatctt catctagggt taccaaacta cgggtgttgg gagagcatta ggagcaatat 480  
tgctcctgat gcaaccacgg acgagcaaga tcaagatcat gaccgaggag tagaagtcac 540  
agttgagtc cacccttgatg atgatgatga tcatcatgga gatctacaca gaggtcatca 600  
ctattggatt cctactcctt ctacagattt gattggtcct acacagttca cttgtcctct 660  
ttgcttcaag acattcaaca gatacaacaa catgcagatg cacatgtggg gacacggctc 720  
acaatacaga aagggaccag aatccttaag aggaacccaa ccaacaggaa tgctaagact 780  
accatgtttc tgctgtgcac ccggttgcaa gaacaacatt gaccacccac gagccaagcc 840  
tcttaaggac tttcgaaccc tccaaacaca ttacaaacgt aaacatgggt ctaaaccatt 900  
tgcttgtcgt atgtgttgta aggcctttgc agtgaaagga gattggagaa cgcattgagaa 960  
gaattgtgga aagctttggt attgctcttg tggctcggat ttaagcaca agaggtcgtc 1020  
taaggaccat gtcaaggcct ttgaaaatgg tcatgttctt tgtgggattg atagttttgg 1080  
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caacaatgag tgtaattag gggttttgtt tatttttctt ctcatgcatt agttgattgt 1200  
atgcacgtgt tctttagttt tgttcttcgg atctttgttt tattttgttt tgagctgttt 1260  
tttttttaat tactaagaag ttaattatca tctaaagatt ttc 1303

<210> 44  
<211> 337  
<212> PRT  
<213> Arabidopsis thaliana

<400> 44  
Met Ser Asn Pro Ala Cys Ser Asn Leu Phe Asn Asn Gly Cys Asp His  
1 5 10 15

Asn Ser Phe Asn Tyr Ser Thr Ser Leu Ser Tyr Ile Tyr Asn Ser His  
20 25 30

Gly Ser Tyr Tyr Tyr Ser Asn Thr Thr Asn Pro Asn Tyr Ile Asn His  
35 40 45

Thr His Thr Thr Ser Thr Ser Pro Asn Ser Pro Pro Leu Arg Glu Ala  
50 55 60

Leu Pro Leu Leu Ser Leu Ser Pro Ile Arg His Gln Glu Gln Gln Asp  
65 70 75 80

Gln

<400> 45  
atggttgcgga gaaqtcagga agttgagata gtggaagata cggcggcgaa atgtttgatg

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acttgtctta aagagttttc gtcgtttcaa gctttgggag gtcacgtgc aagccacaag 180
aaactcatta acagtagcga tccatcactt cttggatcct tgtctaaca gaaaactaaa 240
acggcgacgt ctcatccttg tccgatatgt ggcgtggagt ttccgatggg gcaagctctt 300
ggtggtcaca tgaggagaca taggagtga aaagcctcac caggcacgtt ggttacacgt 360
tcttttttac cggagacgac gacggtgacg actttgaaaa aatcgagtag tgggaagaga 420
gtggcttggt tggacttaga ttcgatggag agtttagtca attggaagtt ggagttggga 480
agaacgattt cttga 495

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&lt;210&gt; 46

&lt;211&gt; 164

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis thaliana

&lt;400&gt; 46

```

Met Val Ala Arg Ser Glu Glu Val Glu Ile Val Glu Asp Thr Ala Ala
1 5 10 15

```

```

Lys Cys Leu Met Leu Leu Ser Arg Val Gly Glu Cys Gly Gly Gly Gly
20 25 30

```

```

Glu Lys Arg Val Phe Arg Cys Lys Thr Cys Leu Lys Glu Phe Ser Ser
35 40 45

```

```

Phe Gln Ala Leu Gly Gly His Arg Ala Ser His Lys Lys Leu Ile Asn
50 55 60

```

```

Ser Ser Asp Pro Ser Leu Leu Gly Ser Leu Ser Asn Lys Lys Thr Lys
65 70 75 80

```

```

Thr Ala Thr Ser His Pro Cys Pro Ile Cys Gly Val Glu Phe Pro Met
85 90 95

```

```

Gly Gln Ala Leu Gly Gly His Met Arg Arg His Arg Ser Glu Lys Ala
100 105 110

```

```

Ser Pro Gly Thr Leu Val Thr Arg Ser Phe Leu Pro Glu Thr Thr Thr
115 120 125

```

```

Val Thr Thr Leu Lys Lys Ser Ser Ser Gly Lys Arg Val Ala Cys Leu
130 135 140

```

```

Asp Leu Asp Ser Met Glu Ser Leu Val Asn Trp Lys Leu Glu Leu Gly
145 150 155 160

```

Arg Thr Ile Ser

&lt;210&gt; 47

&lt;211&gt; 1209

&lt;212&gt; DNA

&lt;213&gt; Arabidopsis thaliana

&lt;400&gt; 47

```

atggaagacg aacatcaaga tctccataaa cccattaatg gagctttgcg agacctcaag 60
attactcggg cacagaaaga aacagaaaag tctacgaacc aacagcaaga tggtacttgt 120
tactatgggc taagggaaaa ctcgaagaag aaaacccagg aatctccgga accaatgaag 180
aagattttgt ttcgatgcga agaattgga aaagggtttc ggtacgagaa atattttaag 240

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aatcatcgct cgatgatgca tttatcgccg aacgagaagg tttgtgaaga atccttgatg 300
actctgtctc gtagccttgg gtttgtgaag aagaagaaaa gatcaagact tggtaggtct 360
gggaagactt tatttactac gtttcttgaa ccgagttcta tttttgatgc gactgatgaa 420
gaattagaag tggcggtattg tttgattcta ttgtctaaga gtgctcccaa gggtgtagac 480
gaattgaaaa gtctttctga ggcagtacgt gttactcctg aaacacctga aagtagctat 540
gatttgggtt gtttgctcaa caagaaaccg agaaaagggtg gtgaattgga atctgggggtt 600
ttaagtaatg agcaaagact tatggaagaa gggtttagta gttatggaac atcgaaagaa 660
ccagctagct tcttgagaga cgaaaacaga ttggatcagc agaaacggag aaaagatggg 720
gaatttgaat cgggactttt gagtaatgag caaagactgc tagaagaaga gattactact 780
cctgtgacat tcaaagggtcc agcgagttcc ttgagacaca agtgtgcttt ggatcgaaat 840
ggaggtgaat ttggctctga gtttttgagt aatgagcaaa cactgatgga agaaacatgg 900
aaagaaccag tgagtttctt agaagataag catgaatttg atcagcggaa aatgcgagaa 960
gctggcgact ttgaatctag gttttacaga attgagcttg gtagtaggagc tatggagtgt 1020
actctttcag atactgatat gctcacgcaa tctgataaga agaacgttga gcatcgatgc 1080
aggttgtgca acaagatatt ctcgtcttat caagctctag ggggtcatca gacgtttcat 1140
cggatgagca aatgtaagaa caagaagaat ggcatagagg aatcagttga acccaggatg 1200
actctgtga                                     1209

```

<210> 48  
 <211> 402  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 48  
 Met Glu Asp Glu His Gln Asp Leu His Lys Pro Ile Asn Gly Ala Leu  
 1 5 10 15  
 Arg Asp Leu Lys Ile Thr Arg Ser Gln Lys Glu Thr Glu Lys Ser Thr  
 20 25 30  
 Asn Gln Gln Gln Asp Val Thr Cys Tyr Tyr Gly Leu Arg Glu Asn Ser  
 35 40 45  
 Lys Lys Lys Thr Gln Glu Ser Pro Glu Pro Met Lys Lys Ile Leu Phe  
 50 55 60  
 Arg Cys Glu Glu Cys Gly Lys Gly Phe Arg Tyr Glu Lys Tyr Phe Lys  
 65 70 75 80  
 Asn His Arg Ser Met Met His Leu Ser Pro Asn Glu Lys Val Cys Glu  
 85 90 95  
 Glu Ser Leu Met Thr Leu Ser Arg Ser Leu Gly Phe Val Lys Lys Lys  
 100 105 110  
 Lys Arg Ser Arg Leu Gly Arg Ser Gly Lys Thr Leu Phe Thr Thr Phe  
 115 120 125  
 Leu Glu Pro Ser Ser Ile Phe Asp Ala Thr Asp Glu Glu Leu Glu Val  
 130 135 140  
 Ala Asp Cys Leu Ile Leu Leu Ser Lys Ser Ala Pro Lys Val Val Asp  
 145 150 155 160  
 Glu Leu Lys Ser Leu Ser Glu Ala Val Arg Val Thr Pro Glu Thr Pro  
 165 170 175  
 Glu Ser Ser Tyr Asp Leu Gly Cys Leu Leu Asn Lys Lys Pro Arg Lys

180                      185                      190  
 Gly Gly Glu Leu Glu Ser Gly Val Leu Ser Asn Glu Gln Arg Leu Met  
     195                      200                      205  
 Glu Glu Gly Phe Ser Ser Tyr Gly Thr Ser Lys Glu Pro Ala Ser Phe  
     210                      215                      220  
 Leu Arg Asp Glu Asn Arg Leu Asp Gln Gln Lys Arg Arg Lys Asp Gly  
     225                      230                      235                      240  
 Glu Phe Glu Ser Gly Leu Leu Ser Asn Glu Gln Arg Leu Leu Glu Glu  
                     245                      250                      255  
 Glu Ile Thr Thr Pro Val Thr Phe Lys Gly Pro Ala Ser Ser Leu Arg  
                     260                      265                      270  
 His Lys Cys Ala Leu Asp Arg Asn Gly Gly Glu Phe Gly Pro Glu Phe  
                     275                      280                      285  
 Leu Ser Asn Glu Gln Thr Leu Met Glu Glu Thr Trp Lys Glu Pro Val  
     290                      295                      300  
 Ser Phe Leu Glu Asp Lys His Glu Phe Asp Gln Arg Lys Met Arg Glu  
     305                      310                      315                      320  
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 Lys Lys Asn Val Glu His Arg Cys Arg Leu Cys Asn Lys Ile Phe Ser  
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 Tyr Glu Cys Lys Thr Cys Asn Arg Thr Phe Ser Ser Phe Gln Ala Leu  
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 Lys Thr Arg Leu Pro Leu Thr Gln Pro Lys Ser Ser Ala Ser Glu Glu  
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 Ala Ser Asn Ile Ile Asn Lys Ala Asn Lys Val His Glu Cys Ser Ile  
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